

WHAT IS CLAIMED IS:

1. A method comprising:
 - (a) determining a first dark current value from a first and second array of photosensitive devices;
 - (b) receiving optical energy onto the first array of photosensitive devices;
 - (c) determining an optical energy value for each element of the the first array based on the received optical energy;
 - (d) determining a second dark current value from the second array of devices at substantially a same time as step (c), the second array of devices being non-sensitive to the optical energy; and
 - (e) adjusting the optical energy value as a function of the first and second dark current values.
2. The method of claim 1, further comprising forming the first and second array of devices as a charge coupled device.
3. The method of claim 1, further comprising forming the second array of devices along a peripheral edge of the first array of devices.
4. The method of claim 1, further comprising determining aberrations in a wavefront producing the optical energy based on the optical energy value.
5. The method of claim 4, further comprising generating a control signal base on the adjusted optical energy value, the adjusted optical energy value being used to correct for the aberrations.
6. The method of claim 1, further comprising coupling the first and second arrays of devices to a stage in a lithographic system.

7. The method of claim 1, further comprising coupling the first and second arrays of devices to a wafer stage.

8. A method of claim 1, further comprising using step (e) to compensate for low light levels during step (c).

9. The method of claim 1, further comprising forming two-dimensional array as the first array.

10. The method of claim 1, further comprising forming a one-dimensional array as the second array.

11. The method of claim 1, further comprising using full-frame architecture technology to perform at least one of steps (a), (c), and (d).

12. The method of claim 1, further comprising using interline architecture technology to perform at least one of steps (a), (c), and (d).

13. The method of claim 1, further comprising using frame-transfer architecture technology to perform at least one of steps (a), (c), and (d).

14. A method for compensating for dark current in a charge coupled device, comprising:

(a) determining a first dark current value from a first and second portion of the charge coupled device;

(b) determining optical energy values from the first portion of the charge coupled device correlating to received optical energy;

(c) determining a second dark current value based on the second portion of the charge coupled device at substantially a same time as step (b), the second portion being non-sensitive to the optical energy; and

(d) adjusting the optical energy values as a function of the first and second dark current values.

15. A method for correcting for wavefront aberrations in a lithography system having a wafer stage comprising:

scanning a charge coupled device having first and second arrays of devices located on the wafer stage;

determining a first dark current value from the first and second array of devices;

generating optical energy values from light having the wavefront aberrations received at the first array of devices;

determining a second dark current value from the second array of devices;

adjusting the optical energy values as a function of on the first and second dark current values; and

generating control signals on the adjusted optical energy values that are used to control an optical device in the lithography system to compensate for the wavefront aberrations.

16. The method of claim 15, further comprising providing the second array of devices that are non-sensitive to the light.

17. The method of claim 15, further comprising determining the second dark current value at substantially a same time as the optical energy is generated.

18. The method of claim 15, further comprising performing the generating step during scanning of the CCD

19. The method of claim 15, further comprising using full-frame architecture technology, interline architecture technology, or frame-transfer

architecture technology to perform at least one of the generating optical energy and determining dark current steps.

20. The method of claim 15, further comprising generating a Zernike polynomial based on the optical energy values, wherein the control signals are based on the Zernike polynomial.

21. The method of claim 1, wherein step (d) is performed each time step (c) is performed.

22. The method of claim 14, wherein step (c) is performed each time step (b) is performed.

23. The method of claim 15, wherein the second dark current value is determined each time the optical energy values are determined.

24. A system comprising:
means for determining a first dark current value using a first and second array of devices
means for receiving optical energy onto the first array of devices;
means for determining an optical energy value for each of the devices based on the received optical energy;
means for determining a second dark current value from the second array of devices at substantially a same time as the means for determining determines the optical energy values, the second array of devices being non-sensitive to the optical energy; and
means for adjusting the optical energy value as a function of the first and second dark current values.

25. A system that corrects for wavefront aberrations in a lithography tool having a wafer stage comprising:

a charge coupled device having first and second arrays of devices located on the wafer stage;

means for determining a first dark current value from the first and second array of devices;

means for generating optical energy values from light having the wavefront aberrations received at the first array of devices;

means for determining a second dark current value from the second array of devices;

means for adjusting the optical energy values as a function of the first and second dark current values; and

means for generating control signals based on the adjusted optical energy values that are used to control an optical device in the lithography tool to compensate for the wavefront aberrations.

26. A method of claim 1, wherein the adjusting step comprises determining a percentage change between the first and second dark current values.

27. A method of claim 14, wherein the adjusting step comprises determining a percentage change between the first and second dark current values.

28. A method of claim 15, wherein the adjusting step comprises determining a percentage change between the first and second dark current values.

29. The method of claim 1, further comprising forming the first and second array of devices as a complementary metal oxide semiconductor device.

30. A method for compensating for dark current in a complimentary metal oxide semiconductor device, comprising:

(a) determining a first dark current value from a first and second portion of the charge coupled device;

(b) determining optical energy values from the first portion of the charge coupled device correlating to received optical energy;

(c) determining a second dark current value based on the second portion of the charge coupled device at substantially a same time as step (b), the second portion being non-sensitive to the optical energy; and

(d) adjusting the optical energy values as a function of the first and second dark current values.